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ABSTRACT

Misleading headings in documents, which make it hard for readers to find what they need, are common in many types of documents. A review of research on the importance of cues in the reading process suggests that heading miscues might seriously impair understanding. Three experiments were conducted to discover how headings cue or miscue adult readers. Results of the first two experiments indicated that headings may be very important in some documents and suggested factors that differentiate between effective and ineffective headings. Results of the third experiment suggested that misleading headings can be offset by clear prose and led to the conclusion that the role headings play in documents is dependent on the nature of the document and on the reader's degree of familiarity with it. In attempting to write headings that help readers, document writers should consider that effective documents develop a human-centered network of ideas focusing on their audience's needs and that they are based on the "scenario principle," providing examples of scenarios in which the reader will likely play a part. Writers of headings should (1) adopt the scenario principle, (2) anticipate readers' questions, (3) clarify all terms used, and (4) make sure that short, definitional headings are accurate and specific. (GT)

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DOCUMENT
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Technical Report No. 9

How Headings In Documents Can Mislead Readers

Heidi Swarts
Linda S. Flower
John R. Hayes

A product of the Document Design Project funded by the National Institute of Education, DHEW, Washington, D.C.

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Heidi Swarts, Linda S. Flower, and John R. Hayes

April, 1980

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ABOUT THE DOCUMENT DESIGN PROJECT

In September 1978, the American Institutes for Research, Carnegie-Mellon University and Siegel & Gale, Inc., began the Document Design Project to foster clear and simple writing and design of public documents. The purpose of the Document Design Project is to help make forms, regulations, brochures, and other written materials easier for people to read, to understand, and to use. Funding for the project comes from the Teaching and Learning/Reading and Language group at the National Institute of Education.

The Project's goal is to increase the knowledge and skills of people who produce public documents. To accomplish this goal, the Document Design Project is

- conducting theoretical and applied research studies on language comprehension, on the ways in which skilled and unskilled writers work, and on problems associated with different document features;
- working directly with government and private agencies as they produce materials for public use;
- developing courses on writing and design for graduate students and undergraduates.

This report is one of a series of technical and explanatory papers resulting from our research.

If you have questions or comments on this report or on other work of the Document Design Project, contact Dr. Janice C. Redish, Director, The Document Design Project, AIR, (202) 342-5071, or Dr. John R. Hayes, Department of Psychology, CMU, (412) 578-2781.

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How Headings in Documents can
Mislead Readers

Introduction

Many people today are working on the problem of how best to design public documents so that they are clear to a wide variety of readers, from lawyers and experts in the particular field, to people who have no experience with public documents. Those of us who have been studying how writers write and how readers read documents and the problems they encounter have been searching for some clear and powerful principles to use in writing and revising documents. We are conducting research to validate (or challenge) a set of common sense guidelines for clear writing, such as:

- use the active rather than passive voice,
- avoid the negative,
- write short, simple sentences.
- avoid jargon and unnecessary legal language,
- consider using personal pronouns.

However, these guidelines all apply to prose. There is, in fact, a prior problem: HEADINGS on documents can mis-cue or misinform readers, who thus have such a hard time just locating the information they need that it doesn't matter how the relevant prose is written--they can't find it.

Miscues in headings can misdirect readers, making it hard to find what they need, in the same way an incorrect signpost

miscues a traveler. For example, if you were on a highway to Boston, and a sign said "San Francisco," that would be a miscue. In the same way, the phrase "Eligible Loan Participants," heading up a paragraph on banks that are eligible to lend money, is a miscue to most of the general public, who assume that the heading refers to people eligible to receive a loan. This paper focuses on heading miscues like this one and the importance of headings to readers.

Headings that miscue readers are rife in Federal regulations, to cite just one type of document. The miscue mentioned above was found in a Small Business Administration loan regulation (see Figure 1). During our work on how readers read documents, we asked owners of small businesses and SBA staffers to locate, read, and explain a section on loan eligibility from the regulation. Everyone had some difficulty, particularly a small business owner named Lucille, who sold transmissions. When asked to find out if she were eligible for a loan, she looked under "Eligible Loan Participants," which referred to eligible banks. She never did find out if she were eligible for a loan--that information was buried under the heading "Business Loans and Guarantees."

Miscues, especially heading miscues, are common in other reference documents. Besides completely misleading headings, like "Eligible Loan Participants," headings with more subtle inaccuracies can miscue the reader. For example, if the signpost

(4) [Delete]
(AMDT 19, AUG. 14, 1978, 43 FR 38907)

(5) *Applicants' fees.* No applicant for SBA financial assistance shall be required as a condition or requirement for obtaining a loan to pay any fees or charges to the lender, Associate, or designee of either, or to purchase any goods or services (including insurance) from the lender, Associate, or designee of either, except as hereinafter provided.

(i) *Fees for services.* A lender or Associate may charge an applicant reasonable fees for necessary services actually performed at the request of the applicant, including fees for necessary services actually rendered in in the preparation of the application. Nothing contained herein shall be deemed to authorize any lender to impose upon an applicant fees or charges, any part of which defrays the lender's overhead costs. If additional, supplemental or revised financial statements, income projections, appraisals, abstracts of title or other record searches are required for the processing of a loan, or as a condition of the disbursement thereof, a lender or an Associate (with the consent of the applicant in either case) may prepare such documentation for a reasonable fee: *Provided, however,* That legible copies of any such documents shall be made available to the applicant, together with any supporting work papers that the applicant may request. A lender may receive the fees authorized under this paragraph whether or not the requested loan is made. A lender may be reimbursed by the borrower for any expenses incurred for filing or recordation necessary to perfect a security interest in the assets of the borrower, including title insurance.

(ii) *Disclosure of fees.* On all applications submitted to SBA the full amount of all fees or expenses, together with a description of the services rendered therefor, paid or to be paid by the applicant to the lender, Associate, or designee of either for purchase of any goods or services (including insurance), shall be disclosed to SBA, as required by Part 103 and by § 122.18 of this chapter.

(6) *Insurance.* An applicant may be required, as a condition of the loan, to purchase or maintain hazard insurance on tangible assets to be used as collateral. An applicant may also be required, when appropriate, to purchase or maintain personal insurance coverage; but any such requirement to purchase personal insurance shall be limited to declining balance term insurance in an initial face amount not in excess of the outstanding balance of the loan, and declining thereafter consistently with the amortization of the loan balance. An applicant shall not be required to purchase insurance from the lender, Associate, or broker, agent, or carrier designated by the lender or Associate. When any insurance is purchased from the lender, Associate, or broker, agent, or carrier designated by the lender or Associate, the cost of such insurance shall be deemed a fee for the purpose of § 120.3(b)(5).

[Rev. 6, 38 FR 19022, July 17, 1973, as amended by Amdt. 3, 40 FR 7822, Feb. 21, 1975; Amdt. 4, 40 FR 30282, July 18, 1975; Amdt. 6, 41 FR 26203, June 25, 1976; Amdt. 7, 41 FR 30586, July 26, 1976; Amdt. 8, 41 FR 40091, Sept. 17, 1976

§ 120.4 Eligible loan participants.

(a) *General eligibility requirements.* SBA is authorized by appropriate enabling legislation to make participation loans in its discretion in cooperation with banks and other lending institutions, excluding small business investment companies licensed by SBA, through agreements to participate on an immediate or deferred (guaranty) basis. Such agreements do not obligate SBA to participate on any particular loan or loans that a lender may submit. The existence of a participation agreement does not limit SBA's right to determine from time to time, as a matter of general policy or with respect to particular loans, the ratio between its share, immediate or guaranteed, of a loan and the lender's share, or SBA's right to withhold, at its sole discretion, approval of a proposed transfer of the guaranteed portion of any loan. To qualify as a loan participant a lending institution must—

(1) *Capability.* Have a continuing capability to evaluate, process, close, disburse, and service commercial term and other loans authorized to be made by SBA to small business concerns. Such capability will be deemed to exist when the lending institution's operations are at all times conducted by persons possessing the ability to evaluate, process, close, disburse, and service loans of the types aforesaid. The lending institution shall hold itself out to the public as engaged in the making of such loans, and shall maintain a reasonably accessible office in its own name, have a listed telephone number, and be open to the public during regular business hours.

(2) *Good character and reputation.* Have continuing good character and reputation. A lending institution will be deemed to possess good character and reputation if the holders, direct or indirect, of ninety percent or more of its stock, and all members of its management (including officers and directors) possess good character and reputation.

(3) *Financing subsidiaries.* Not be a concern that is or will be engaged primarily in financing the operations of an affiliate as defined in § 121.3-2 of this chapter.

Amdt 20, Sep. 28, 1978

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Figure 1: Small Business Administration loan regulation with heading miscue.

en route to Boston had said "Cambridge, Roxbury, and Quincy" instead of "San Francisco" it would have been inaccurate and incomplete, if not totally incorrect--in the same way the heading "General Policy" is inaccurate as the title to a section containing some "requirements" and "procedures" as well as the agency's "general policy." If the sign had said "New England" it would have been too vague to be of help, just as "Business Loans and Guarantees" is too vague to let the reader know it is the title for a section on eligibility. In contrast, a title like "Who is Eligible to Apply for a Loan" would have made it clear.

Our study of heading miscues in documents raises some interesting questions about the place of headings in the writing or revising process. After a brief review of the literature, we will report on three short experiments on headings in documents. Results of two short tests indicate that headings may be very important in some documents and that heading miscues could therefore cause significant difficulty. Other findings, from our third experiment and others' studies, indicate that misleading headings can be offset by clear and readable prose. Certainly, this depends on other variables, such as clarity of prose, the nature of the document, and various design factors (type size, amount of leading, and many others).

Research on Cues in the Reading Process: A Brief Review

There is a large body of theoretical work on the importance

of cues in the reading process. Work from a variety of fields points to the notion that readers do not absorb prefabricated ideas passively, but rather they read actively and use cues in the text to help create meaning. Although Goodman's (1976) discussion of reading as a "psycholinguistic guessing game" had more to do with graphic or grammatical cues, his notion can be extended to a notion of the higher level reading and comprehending process as a "semantic" or "conceptual" guessing game, especially in the case of difficult or unfamiliar material.[1]

Cognitive psychologists have pointed out that we possess specific, detailed knowledge about certain common situations, like eating at a restaurant or applying for a job (Schank & Abelson, 1977; Rumelhart, 1975). We need to use cues to help us recall these knowledge structures, and it is reasonable to assume that the more novel the situation, the more we need to search for cues as we try to match it with some experience or knowledge in

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[1] It is important to note that our use of the word "miscue" in this paper is distinct from at least one other common use of the word, namely, the way Goodman and other reading researchers use it. Within the field of reading research "miscue" can refer to a mistake made while someone is reading orally--really a "mis-apprehension" or "mis-understanding" of a very local cue, such as a letter, or a word (see Allen and Watson, eds., Findings of Research in Miscue Analysis: Classroom Implications, Urbana, Ill., ERIC, 1976). Such mistakes are reader-generated. Our use of "miscue" refers to something larger--a heading or title of at least a phrase, usually--which is the writer's responsibility and is on the semantic or conceptual level.

our memory.

Many researchers have pointed out the importance of verbal cues in reading. From results of experiments in which subjects had to categorize and then solve algebra problems, Hinsley, Hayes, and Simon (1977) concluded that early verbal cues played a vital role in subjects' process of classifying problem types. Half of the subjects categorized problems after hearing less than one-fifth of the text. Hinsley et. al. found that when a problem of one type--a distance-rate-time problem--was reworded to seem like a different type--a triangle problem--in order to mislead subjects, half the subjects paid more attention to early verbal cues than the underlying algebraic structure of the problem, and some actually misheard information in the rest of the problem so that it would conform to their schema of a triangle problem.

Other researchers, such as Dooling and Lachman (1971) and Bransford and McCarrell (1972), have shown that introductory phrases, or headings in particular, significantly aid comprehension and recall. Since these cues play such an important part in readers' ease of comprehension, it is plausible that heading miscues might seriously impair understanding. At best, readers waste time repeating the search procedure until they find the right section; at worst, readers flounder among a mass of incomprehensible text and must work hard to organize it, sometimes failing to do so.

Experiments

To find out how headings were cueing--or miscueing--readers, we performed several relatively simple experiments. We asked two questions:

1. If the headings are misleading, do they make the reader create inaccurate predictions of the content?
2. Even if the headings miscue the reader, how important are they, helpful or misleading, if the prose is good?

To start to answer the first question--do misleading headings create inaccurate predictions--we did two simple tests using three versions of sections from the Small Business Administration Rules and Regulations. Two were original, hard-to-read versions (on loans and on Advance Payments, an interest-free loan a small business can receive). One was a new version of the second section (Advance Payments), revised for reading ease. The hard-to-read sections' headings were generally vague, like "Requirements" or "Business Loans and Guarantees," or else were clear miscues, like "Eligible Loan Participants." The easy-to-read Advance Payments revision included more specific headings that focused on the reader's needs, such as "Setting Up the Bank Account."

In all three experiments, subjects were adult volunteers who worked at Carnegie-Mellon University. In total, there were 32 females and 23 males, ranging in age from about 22 to about 60. They were from one of two categories, clerical workers, or

graduate students and professors, and each experimental group was divided equally between these two categories.

1. Experiment 1

In Experiment 1 five subjects for each of the three sections listened to headings read in sequence and then tried in writing to guess what material they thought would be in that section. We hypothesized that content generated for the headings from the two hard-to-read sections would be less accurate than content generated for the revision. We also predicted that subjects would be least accurate in predicting content from the loan section since its headings contained clear miscues of meaning, while the miscues in the headings of the original Advance Payments section were more vague and had more to do with scope and fine shades of meaning.

Subjects' written predictions of the content they thought would follow each heading were scored as "correct," "partially correct," or "incorrect," based on the actual content below each heading. The results (see Table 1) support our hypothesis. Subjects who read the original Advance Payments headings did significantly better than those who read the loan section headings, and those with the revised Advance Payments headings did significantly better than either.

Table 1

% CORRECT PREDICTIONS OF CONTENT,
BASED ON HEADINGS (MEAN)

HARD TO READ	
1. LOAN section (clear miscues of meaning)	0
2. ADVANCE PAYMENTS section (vague headings with some inaccuracies)	50
EASY TO READ	
3. ADVANCE PAYMENTS section, revised	74

Pitman randomization tests showed that 2. is superior to 1. and 3. is superior to both 1. and 2. at the .005 level.

2. Experiment 2

Experiment 2 was almost an inverse of the first. Five subjects for each of the three sections were given a list of ten sentences from the section they were working with, each containing a significant piece of information, and were asked to match each sentence with one of the section headings. Again, we hypothesized that the greatest number of errors would occur with the Loan section. The results (see Table 2) were that those with the revised Advance Payments section performed similarly to

subjects with the original Advance Payments section--but the latter did significantly better than those with the loan regulation.

Table 2

% CORRECT SENTENCE-TO-HEADING MATCHES (MEAN)

HARD TO READ	
1. LOAN section (clear miscues of meaning)	10
2. ADVANCE PAYMENTS section (vague headings with some inaccuracies)	50
EASY TO READ	
3. ADVANCE PAYMENTS section, revised	60

A Pitman randomization test showed that 2. is superior to 1. at the .05 level.

These two small tests seemed to indicate that some headings can cue readers much more effectively than others. While ineffective headings are often vague and focused on broad concepts to define (see Flower, Hayes, Swarts, 1980) as if they were dictionary entries, effective headings are accurate, specific, and focused on the reader's needs and goals (see

Appendix and "What Writers Can Do" for examples and a discussion of headings).

3. Experiment 3

But what about our second question: how important are headings to readers in the context of a document as a whole? When a reader is actually reading a document, does clear prose outweigh misleading headings--or can misleading headings make a difference in usability even in generally clear documents? To find out, we tested five versions of the same insurance policy with readers (see Table 3). Three of these five versions had completely revised "plain English" prose; of these, one also had clear headings, one had headings that were vague and contained miscues, and one had NO headings. The other two versions had the original, hard-to-understand prose, but one had misleading headings, and one had helpful headings. It should be noted that all versions of the insurance policy differed from the regulation sections we used in purpose, visual design, and nature of the prose (see Appendix).

After reading a short explanation of the "personal liability catastrophe policy," five subjects for each of the five versions were given a list of questions about their coverage under this policy and were asked to search the policy (without having read

it first) to find the answers. We hoped that by testing the search procedure we could avoid a test of the subjects' memory and instead could measure the usefulness of heading cues. Also, the task would approximate the actual situation in which a reader would use a reference document (and many readers never refer to documents like insurance policies until they have to, whether they should or not). Finally, subjects were asked to look at the questions again, and predict under which heading each answer should logically be found, whether it was found there or not. Both tasks were timed.

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[2] These are typical of the types of questions subjects were given:

1. You and a guest at your home are playing frisbee and you hit him in the eye. His glasses shatter and he is blinded. He sues you for causing him physical injury and the court rules that you are liable. If the amount you are sued for is greater than your ordinary liability insurance covers you for, could this policy cover such a claim against you?

2. If the guest had been involved in a different type of accident and had sued you for causing shock and mental anguish, would you be covered?

3. You ask a friend to take care of your dog while you are on vacation. While you are gone, the dog bites a small child, who must be hospitalized for two weeks. Will this policy cover your friend if she is sued?

Table 3

5 VERSIONS OF INSURANCE POLICY TESTED

TEXT	HEADINGS: Revised	HEADINGS: Original	HEADINGS: No Headings
Revised	Clear text, Clear headings (*"best" version)	Clear text, Misleading headings	Clear text, No headings
Original	Unclear text, Clear headings	Unclear text, Misleading headings (*"worst" version)	

We hypothesized that subjects who read the revised version with clear text and clear headings--the "best" version--would get the most correct answers. Our hypothesis was that if headings are very important to usability, the unclear text with the clear headings would be significantly more usable than the unclear text with the misleading headings. We also thought that if miscues were really a problem, NO headings might be better than misleading headings.

One way ANOVAs were performed for the five versions on three effects:

- the time it took to answer questions
- the number of times answers were correctly matched to the headings they were found under (version with no headings excluded)
- the number of questions answered correctly.

The only effect found to be significant ($F = 3.87$, $p < .05$) was the number of questions answered correctly. In fact, subjects reading insurance policies with clear headings did NOT take significantly less time to answer the questions than those whose policies had misleading headings, and perhaps more surprisingly, did not do significantly better at matching answers to their headings. This result is in contrast to the results of Experiments 1 and 2. (This matching task, however, may have been significantly more difficult than the earlier one, since all versions of the policy had about twice as many headings to choose from as any of the regulation sections used in Experiments 1 and 2.)

The significant result is a predictable one: clear prose tests well whether the headings are clear or misleading. Each of the three versions of the policy with clear prose (with clear, misleading, or no headings) performed better than at least one version with the unclear text.

This result would seem to indicate that in a document, clear

prose generally outweighs misleading headings. This result echoes the findings of Charrow and Redish's (1980) study of headings in warranties. They found that "subjects who read plain English warranties without standardized headings performed just as well statistically as those who read plain English versions with standardized headings."[3] However, it is certainly too early to conclude that headings in prose have little or no effect on readers--especially when we recall the pro[illegible]ol of Lucille, the small business owner, trying to read a re[illegible]tion without the benefit of clear, understandable headings. [illegible] lack of significant differences in both the Charrow and Redish study and this one may not be general. In the warranty study, the ease of reading plain English prose, which was only a half page long, may have eliminated the need for headings, which one would expect are more needed in long documents with obscure prose (like a Federal regulation). Also, their subjects were unusually well educated and presumably would have performed well on most tests dealing with written documents. In our study, the subject pool may have been small and diverse enough to wash out performance differences that might otherwise have appeared.

But the most important factors accounting for our results

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[3] Charrow, V. R., & Redish, J. C. A study of standardized headings for warranties. (Document Design Project Technical Report No. 6) Washington, D.C.: American Institutes for Research, February 1980.

are probably the length of the document and the nature of the document. Both the warranties Charrow and Redish used and the insurance policies we used are probably more familiar to average people than, say, a legal brief or a Federal regulation. Our plain English insurance policy and the documents used by Charrow and Redish were also visually designed for easy reading, with plenty of white space, whereas a regulation has little white space and a lot of words packed into narrow, single-spaced columns (see Figure 1). Finally, most of the documents used in both their tests and ours were shorter than a regulation, and some were much shorter.

What Writers Can Do

The role headings play in documents seems to be dependent on the length, style, purpose, and degree of familiarity of the document in question. But as Experiments 1 and 2 demonstrate, readers can use headings to predict content. It may be that the longer and more obscure the document is to average people, the more important it is that headings perform this cueing function. Given this assumption, how can document writers write headings so they can really help readers?

Evidence indicates that effective revised reference documents' prose is structured with the assumption that the reader's ultimate goal in reading the document is not to absorb information as a student reading a textbook does, but rather to

act (Flower, et. al., 1980). Such documents develop a human-centered network of ideas focusing on their audience's needs, and their prose gives examples of actions, or scenarios, in which the reader will likely play a part (such as "If the lender agrees to make the loan and if the Commissioner of Education approves...the applicant must then sign a promissory note." For an example of text embedded with scenarios, see Appendix, p. A-5). Since readers often seem to cast different kinds of information into a scenario format in order to comprehend it (Flower, et. al., 1980, p. 34), one might expect that the scenario principle would be useful in writing or revising a wide variety of documents.

The scenario principle also applies to headings.[4] Headings from the loan section of the SBA regulation, which were unsuccessful in helping subjects predict the content that followed, were based on broad concepts to define and used unfamiliar language, as in "Examination of subsection (b) lenders." (See Appendix for headings and sample pages of documents used in this study.) In contrast, many headings from

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[4] In a test designed to see whether good writers used scenarios in headings, four judges sorted a scrambled list of 63 headings from OLD and REVISED documents. OLD headings included: Personal Liability; Occurrence; Social Disadvantage. REVISED headings included: Who is an Eligible Student Borrower?; The Loan Application Process; Can This Policy Be Cancelled? The four subjects correctly identified 74% of the headings from REVISED documents. (Flower, et. al., 1980).

the revised Personal Catastrophe Liability Policy imply an actor performing an action in a context: "How this policy protects you and your family," "What you must do for us."

But, someone might ask, "is it necessary that every heading set the scene so explicitly? There are cases in which a few key words, like 'Applicant Eligibility,' are enough to cue readers without resorting to a scenario." The response to this question is qualified agreement. A heading like "Your Extra Auto Liability Insurance" is probably all the reader needs if she understands what "liability insurance" is and is aware that this is the section which tells her whether she is covered in special cases (an earlier heading, "A Closer Look at Your Coverage," has told her this). But the writer must consider other factors. One is, can the writer safely assume that the reader understands a document's assumptions, purpose, structure, and scope? If not, headings will be vital clues. The more unfamiliar a document is, the more the reader will need to use heading cues to understand the framework of the document as a whole. To a small business owner who wants money, has never seen a federal regulation before, and is busy trying to sort out all the participants, "Requirements" gives few clues about the prose that will follow: Whose requirements? His? The bank's? Which requirements--requirements for getting a loan? Requirements for paying it back? But a heading like "What You Must Do to Pay Back an SBA Loan" tells him exactly what he is going to read about. (The

scenario, not the personal pronoun, is the salient factor: a document with several different audiences including, say, the SBA staffer, the bank official, and the small business owner, can use headings like "What the Borrower Must Do to Pay Back an SBA Loan.") Patricia Wright has pointed out that the document reader often approaches the document with a question in mind (Wright, 1978). It is the writer's job to anticipate readers' questions; a heading that presupposes a question, such as "What The Department Requires Scholarship Applicants to Provide," tells the reader that her question, "What do I have to provide them with?" will be answered in the following paragraph.

The writer must also ask if all the intended readers will clearly understand all the terms in the heading. This obvious consideration is often overlooked in practice. A heading like "Reports to SBA by subsection (b) lenders" (Loan section, SBA reg.) is a useless cue to anyone who doesn't know what a subsection (b) lender is.

Finally, if the writer feels a short, definitional heading like "Definitions" is all the reader needs, she should make sure that it is accurate and specific: an "Applicant Eligibility" section that wanders off to discuss general policy violates the reader's expectations and lets him know that the rest of the headings are probably of dubious value as cues, so it is safer to ignore them and just wade through the prose unaided.

In short, there are a number of steps document writers and

revisers can take to write clear and informative headings that aid the reader. Headings are merely one document design element among many; clear, usable public documents will above all be made possible by changes in prose style and visual design. But document designers, who must juggle a host of constraints, should remember that modifying headings is a relatively economical revision technique, and should not ignore the important role headings play as guideposts in a document.

REFERENCES

Bransford, J., & McCarrell, N. A sketch of a cognitive approach to comprehension: Some thoughts about understanding what it means to comprehend. Paper presented at the Conference on Cognition and the Symbolic Processes, Pennsylvania State University, October 23-25, 1972, 26-27.

Charrow, V. R., & Redish, J. C. A study of standardized headings for warranties. (Document Design Project Technical Report No. 6) Washington, D.C.: American Institutes for Research, February, 1980.

Dooling, D. J., & Lachman, R. Effects of comprehension on retention of prose. Journal of Experimental Psychology, 1971, 88, 221.

Flower, L. S., Hayes, J. R., & Swarts, H. Revising functional documents: The scenario principle. (Document Design Project Technical Report No. 10). Pittsburgh, Pa.: Carnegie-Mellon University, March 1980.

Goodman, K. S. Reading: A psycholinguistic guessing game. In H Singer & R. B. Ruddell (Eds.), Theoretical models and processes of reading. Newark, Del.: International Reading Association, 1976.

Hinsley, D. A., Hayes, J. R., & Simon, H. A. From words to equations: Meaning and representation in algebra word problems. In M. A. Just & P. A. Carpenter (Eds.), Cognitive processes in comprehension. Hillsdale, N.J.: Lawrence

Erlbaum Associates, 1977.

Rumelhart, D. E. Notes on a schema for stories. In D. G. Bobrow & A. Collins (Eds.), Representation and understanding: Studies in cognitive science. New York: Academic Press, 1975.

Schank, R., & Abelson, R. Scripts, plans, goals and understanding An inquiry into human knowledge structure. Hillsdale, N.J.: Lawrence Erlbaum Associates, 1977.

Wright, P. Quality control aspects of document design. In E. Rothkopf (Chair), Psychological factors in the design and use of written communications. Coordinated paper session presented at the meeting of the XIX International Congress of Applied Psychology, 1978.

APPENDIX

Headings and Sample Pages
from Documents used in
Experiments

Headings Used in Experiments 1 and 2

1. Original version,
   Advance Payments section, SBA Regulation

   ADVANCE PAYMENTS

   Definitions

   General Policy

   Requirements

   Procedure

   Use of Advance Payment Funds

2. Revised version,
   Advance Payments section, SBA Regulation

   ADVANCE PAYMENTS

   Definitions

   Eligibility

   Procedures

      Setting Up the Bank Account

      Records

      The Funds, and Rules on Receiving Them

      Withdrawing Money

      Using the Funds

   Cancellation

3. Loan section, SBA Regulation

   BUSINESS LOAN POLICY

   Introduction

   Business Loans and Guarantees

   Terms and Conditions of Business Loans and Guarantees

Eligible Loan Participants

Operations of Eligible Participants

Reports to SBA by subsection (b) Lenders

Examination of subsection (b) Lenders

Headings of original version,
St. Paul Mercury Insurance Co.
Personal Catastrophe Liability Policy

1. INSURING AGREEMENTS

    Coverage

        Personal Liability

        Uninsured Motorists

    Defense-Settlement

    Limit of Liability

2. DEFINITIONS

    "Named Insured" and "Insured"

        Automobile and Watercraft Liability

        Other Personal Liability

    Personal Injuries

    Property Damage

    Ultimate Net Loss

    Automobile

    Business

    Business Property

    Relative

    Occurrence

    Underinsured Automobile

    Non-owned Automobile

    Recreational Motor Vehicle

    Aircraft

    Policy Period, Territory

3. EXCLUSIONS

First page, original version,
St. Paul Mercury Insurance Co.
Personal Catastrophe Liability Policy

Family Security UMBRELLA POLICY
A Personal Catastrophe Liability Policy
St. Paul Mercury Insurance Company
St. Paul, Minnesota
(A stock insurance company, hereinafter called the Company)

In consideration of the payment of premiums as herein provided, and subject to all the exclusions, limitations, reductions (if any) and other terms of this Policy, the Company hereby insures the Named Insured against the losses specified in this Policy.

INSURING AGREEMENTS

I. COVERAGE

A. PERSONAL LIABILITY–The Company will indemnify the Insured for all sums which the Insured shall be legally obligated to pay as damages and expenses, all as more fully defined by the term "Ultimate Net Loss," on account of:

1. Personal Injuries, including death at any time resulting therefrom.
2. Property Damage.

B. UNINSURED MOTORISTS–The Company agrees to pay all sums up to $25,000 less the amount of the "underlying limits" which the Insured or his legal representative shall be legally entitled to recover as damages from the owner or operator of an uninsured automobile or an underinsured automobile provided:

1. The Company's liability hereunder shall be only in excess of the "underlying limits" and
2. Coverage hereunder for loss involving such uninsured or underinsured automobile shall apply only in accordance with the terms and conditions of underlying uninsured motorist's insurance afforded to the Insured at the time of loss, or in the absence thereof, uninsured motorist's insurance afforded to the Insured as of the effective date of this Policy.

II. DEFENSE–SETTLEMENT

With respect to any occurrence not covered by the underlying Policy(ies) or insurance described in Schedule A hereof or any other underlying insurance collectible by the Insured, but covered by the terms and conditions of this Policy except for the amount of retained limit specified below, the Company shall:

A. defend any suit against the Insured alleging such injury or destruction and seeking damages on account thereof, even if such suit is groundless, false or fraudulent; but the Company may make such investigation, negotiation and settlement of any claim or suit as it deems expedient;

B. pay all premiums on bonds to release attachments for an amount not in excess of the applicable limit of liability of Coverage (a) of this Policy, all premiums on appeal bonds required in any such defended suit, the cost of bail bonds required of the Insured in the event of automobile occurrence or traffic law violation during the policy period, but without any obligation to apply for or furnish any such bonds;

C. pay all expenses incurred by the Company, all costs taxed against the Insured in any such suit and all interest accruing after entry of judgment until the Company has paid or tendered or deposited in court such part of such judgment as does not exceed the limit of the Company's liability thereon;

D. reimburse the Insured for loss of earnings if incurred at the Company's request, but not to exceed $100.00 per day nor an aggregate of $5,000.00;

E. reimburse the Insured for all other reasonable expenses, incurred at the Company's request;

and the amounts so incurred, except settlements of claims and suits, are payable by the Company in addition to the applicable limit of liability of this Policy.

Headings, Revised Version,
St. Paul Fire and Marine Insurance Co.
Personal Liability Catastrophe Policy

This is your policy.
Keep it in a safe place.

Personal Liability Catastrophe Policy

This insurance policy is designed to give you and your family protection against many liabilities not covered by your other policies. We've written it in plain, easy-to-understand English. We hope you'll read it and familiarize yourself with what it says. If you've any questions about what risks are covered or what persons your policy insures, call or write your agent or us and we'll be glad to answer them. As you read the policy, remember that the words you, your and yours mean the person named on the attached declarations page or his or her wife or husband who lives in the same household. The words we, us, our and ours mean St. Paul Fire and Marine Insurance Company.

Where To Find It	Page
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Extra insurance on top of your other policies	3
Broader coverage than your other policies	4
Five types of claim not covered by this policy	4
A closer look at your coverage	5
Your extra auto liability insurance	5
Broad auto coverage for you and others	5
Your extra boat liability insurance	6
Your extra golf cart and snowmobile insurance	6
Your extra airplane insurance	7
Your extra personal liability insurance	7
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What you must do for us	8
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ST. PAUL FIRE AND MARINE INSURANCE COMPANY
St. Paul, Minnesota 55102
(A stock insurance company)

A-5

First page, Revised Version,
St. Paul Fire and Marine Insurance Co.
Personal Liability Catastrophe Policy

How This Policy Protects You and Your Family

We've designed this policy to give you and your family extra liability protection above and beyond the coverage of your present auto, homeowners and other policies listed on the attached declarations page. It doesn't matter whether you bought these other policies from us or other insurance companies.

This policy gives you two types of extra protection. First, it adds to the liability limits of your other policies. Say you have a standard auto policy that covers you up to a $300,000 liability limit for bodily injury for each accident. With this policy you're covered even if a jury says you have to pay $1,300,000.

Second, there are liabilities your other policies don't cover. Different companies have different policies, but none of them cover the full range of all possible claims. This policy is designed to protect you against some unusual claims that aren't covered by your standard policies. And its coverage is worldwide – you're protected wherever you happen to be.

You have an auto accident while on vacation in Italy. Your auto policy probably covers you only for accidents in the U.S.A. and Canada. This policy has no such limitation.

We'll give you this extra protection up to the limit listed on the attached declarations page for each accident or incident happening during the policy period. There's no limit to the number of accidents or incidents covered during that period. But we won't pay more than the limit for any one accident or incident, no matter how many claims are made against one or more of those insured. We'll pay the full amount payable under a court decision or out-of-court settlement we agreed to, minus whatever can be collected as recovery or salvage.

But remember, this is a liability policy. It covers only somebody else's claim against you. It doesn't cover damages to your own property, your car, your house or your valuables.

Extra Insurance on Top of Your Other Policies

Now let's explain the basic conditions of the first type of extra protection that adds to the liability limits of your other policies.

If a liability covered by this policy is also covered by one or more of your other insurance policies, we'll pay only the outstanding balance after all your other insurance and that of all those insured for the same accident is used up. We'll do this up to the limit of this policy. If your other insurance coverage at the time of the accident has lapsed or is less than the limit listed on the attached declarations page, we'll pay only the difference between the coverage you said you had and your total liability. So remember, you're responsible for the amount of damages to be paid below the limit where this policy applies.

Also, if your other insurance company becomes insolvent or you broke your contract with them, for instance, you didn't give proper notice of the accident, we'll pay only the difference between the listed minimum limit and your total liability.

If you're covered or should've been covered by other insurance policies listed on the attached declarations page, we won't be responsible for any defense, investigation, negotiation or settlement that should've been made by your other insurance company. And we won't pay for legal expenses such as lawyers' fees, court costs, interest on judgments, salaries or office expenses. But we have the right to enter any such suit if we want to.